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REMARKS

By this amendment, claims 1, 4, 6-9, 15, 20, and 25 are amended to place this application in condition for allowance. Currently, claims 1-26 are before the Examiner for consideration on their merits.

First, claims 7-9 and 15 have been amended to remove the informalities noted by the Examiner. Based on the change to claims 7-9, the rejection under 35 U.S.C. § 112, second paragraph should be withdrawn.

Claims 1, 4, 6, and 20 are amended to clarify that the reflected incident radar signal is a coherently reflected signal. Support for this change can be seen in the Figures wherein the incident radiation being reflected is depicted as a coherent reflection.

Second, Applicant wishes to traverse the rejection of claims 1-8 and 10-26 based on United States Patent No. 5,788,110 to Alhamad. In this rejection, the Examiner has taken the position that the array of elements of Alhamad has the claimed reflective surfaces with substantially planar faces. The Examiner also concludes that the faces are oriented so as to reflect an incident radar signal in a direction away from its direction of incidence for a given range of incident directions.

The Examiner admits that Alhamad does not teach use of the array on a sea-going vessel, but concludes that it would be obvious to do so since it is known to want to camouflage military vessels.

Contrary to the Examiner's assertion, Alhamad does not teach the claimed reflective surfaces with substantially planar faces as recited in array claim 1 and method claims 20 and 25, and cannot establish a *prima facie* case of obviousness for this reason alone.

Alhamad relates to a barrier for protecting objects against beams of radiant energy of high intensity such as lasers, as well as those of lower intensity such as radar waves. The barrier of the Alhamad invention is essentially comprised of a layer of slitted and expanded metal foils (such as aluminum, copper or magnesium) so as to form a net-like surface.

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The Alhamad system provides a 'barrier' that relies on 'unfocusing' or scattering a concentrated focused beam. According to Alhamad, the barrier allows radiant energy to dwell for a minimum period of time to enable the barrier's surface to diffuse or scatter the focused beam causing the beam to lose its intensity.

The Alhamad barrier consequently relies on a porous surface that allows radiation energy to penetrate through the outer layer of the perforations and then reflect within the randomly aligned surfaces of material within, leaving through the surface perforation as a series of non-coherent reflections at random angles.

It is a feature of the Alhamad barrier that it has a material with a high porosity in its barrier layer so that it can effectively disperse focused radar beams. In the preferred form of the Alhamad invention, the material has a porosity in the range of 80-99%.

In comparison, the Applicant's system operates to coherently reflect a signal from radar beams (i.e., non-damaging surveillance and targeting radars and anti-ship missile seeker heads, rather than radar or laser based weaponry).

The Applicant's system uses a non-porous (or substantially non-porous) material to reflect incoming radiation energy in a coherent manner so that it can be reflected in a predetermined direction away from the angle of incidence of the incoming radar beam. It relies on a coherent reflectivity to direct the radar reflections away from their emission point, therefore reducing the radar signature of the vehicle or other structure on which the system is incorporated.

Although not explicitly stated in the specification, the preferred porosity of the material of the Applicant's invention is 0%, that is, fully reflecting. While the Applicant's system could still function, although in a degraded state, with a porosity in the surface layer approaching 10%, the Applicant's system would not function with a surface layer porosity of 80-99%. This irreconcilable difference in the porosity requirements of the two systems is an outcome of the fundamental differences in the mechanism of operation of the Applicant's system as compared to the Alhamad system.

The Examiner's attention is directed to the disclosure at page 4 from line 5 of the Applicant's specification, which states that:

"The arrangement is also preferably such that the facets of the array do not provide to any appreciable extent internal reflection sources whereby to

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reduce the likelihood of an incident radar signal being reflected towards an adjacent element in the array and in turn reflected back in the direction of the incident signal".

By contrast, the Alhamad system, having a barrier layer of high porosity and preferably 80-99% porosity, relies on capture and internal scattering within the interior of the material to diffuse the energy from the beam.

The coplanar nature of the facets of surfaces of the Applicant's invention also allows for multiple coherent reflections.

As clearly stated on page 7 of the current specification, the invention seeks to control the direction in which the electromagnetic waves are reflected, which is in complete contrast to the Alhamad construction.

It is respectfully contended that Alhamad does not teach the claimed reflective surface as is now defined in claims 1, 20, and 25. Lacking this critical feature of the claims, Alhamad cannot teach the invention of claims 1, 20, and 25 even assuming that it is obvious to use the Alhamad structure on a sea-going vessel.

Furthermore, one cannot conclude that it would be obvious to modify Alhamad and arrive at the invention. There is no motivation in the art of record to change the nature of Alhamad and produce coherently reflected radar signals from the Alhamad material. If anything, Alhamad would teach one of skill in the art NOT to make such a change since the very purpose of Alhamad is to diffuse the signal striking the Alhamad material, not reflect it back in a coherent manner. Any further contention that Alhamad does establish a prima facie case of obviousness is totally unsubstantiated and would not be sustained on appeal. If another rejection is made, the Examiner is called upon to support the rejection with objective evidence, not speculation as to the reasons why the invention is obvious.

Accordingly, the Examiner is respectfully requested to examine this application in light of this amendment and pass claims 1-26 onto issuance.

If the Examiner believes that a telephonic interview would be helpful in expediting the allowance of this application, the Examiner is respectfully requested to telephone the undersigned at 202-835-1753.

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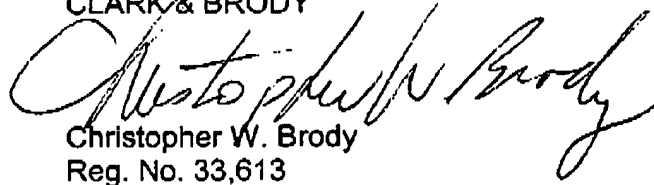
The above constitutes a complete response to the Office Action dated September 15, 2003.

Again, reconsideration and allowance of this application is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136(a) is hereby made. Please also charge any shortage in fees due in connection with the filing of this paper, including extension of times fees to deposit account number 50-1088 and please credit any excess fees to such account.

Respectfully submitted,

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